

MASS. INST. OF TECHNOLOGY  
OCT 9 1946  
LIBRARY

# The Tech

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CAMBRIDGE, MASS., TUESDAY, OCTOBER 8, 1946

SPECIAL ISSUE

## PRESIDENT COMPTON'S REPORT

### Library Heads New Institute Improvements

Construction Started On Gas Turbine Lab; Towing Tank Planned

I have spoken of the increase in our educational plant through additions made during the war. This added space has not only enabled us to take care of the great increase in the student body, but at the same time has both permitted and required a wholesale reallocation of space and renovation of equipment throughout the entire Institute plant. This general redistribution of space—the greatest since the Institute moved from Boston to Cambridge—together with the acquirement of the new buildings, is requiring an expenditure of \$1,750,000. While this has been a very severe drain on the Institute's limited unrestricted capital resources, the Executive Committee has felt the expenditure warranted by the gain in educational efficiency thus made possible. For example, had we not modernized and enlarged our Chemistry laboratories, at a cost of \$400,000, we would not be able to handle 900 students in each of the first two undergraduate years, compared with the 600 accommodated prior to the war. New laboratories for Physics, Mechanical Engineering, Electrical Engineering, Aeronautical Engineering, and other departments similarly have enlarged our capacity and provided better instructional facilities.

The Charles Hayden Memorial Library, very President's Report must review the past year and preview plans for the immediate future. It is fortunate when the report can also include an exciting announcement of a great step forward.

For years a library building fully adequate to the needs of the Institute has had top priority in our estimate of the desirability of new buildings. Plans have now been completed for a building facing the river front between the main educational buildings and Walker Memorial which will admirably fill this need and take the form of a memorial to a distinguished Alumnus, the late Charles Hayden, '90.

Construction of this library building has been assured, I am happy to announce, a gift of \$2,200,000 received from the Charles Hayden Foundation through the generosity of Mr. Hayden's brother, Willard Hayden, and the cotrustees of the foundation. This princely gift, the largest single gift received by the Institute, and the Eastman benefactions, will cover a large portion of the total cost of the building.

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### New Dormitory Senior House Institute to Assist Veteran's Activities

In a professional school such as the Massachusetts Institute of Technology, first consideration must be given to the excellence of its education and research.

Concentration on this prime objective does not, however, diminish the importance of providing an extracurricular environment conducive to the development of those student attitudes and traits of personality which are so important to a well-rounded, successful, and happy member of society. Our institution needs very much to give increased attention to these matters.

The decision of the Corporation Executive and Finance committees to build a new dormitory is an important move in this direction. Designed by the distinguished Finnish architect and professor at the Institute, Alvar Aalto, the new dormitory will be a senior house and will have novel features for efficient living and for cultural and social intercourse among students. As in the library, which will in itself multiply our opportunities for student extracurricular development, we seek in this new housing unit not to repeat old forms but to move forward with new and more efficient concepts of student housing.

Under the active chairmanship of Donald F. Carpenter, '22, the Corporation Committee on Student Activity has considered ways in which wholesome recreational opportunities may be increased in the immediate future and plans for our long-term objectives. In line with the committee's recommendations we have plans ready for the construction of adequate athletic units, the most acutely needed of which is a gymnasium. I submit again that an institution such as M. I. T. needs this type of facility even more than does the liberal arts college and that our present facilities are woefully inadequate in spite of several "bright spots," and I believe that donors interested in the development of youth could find no better opportunity to invest funds.

In addition to better physical facilities, we need extra personnel to deal with student life. Dean Lobdell has called attention with increasing frequency to the mounting demands on the Office of the Dean of Students and the opportunities it has for extending its counseling and guidance functions. Student activities and student government were badly disrupted by the war and need a helping hand in their re-establishment; the fraternities

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### Veterans Comprise 60% Of Students; One Third Married

Grades Higher Than Averages Before War; Men 2-4 Years Older

If you were to introduce yourself to a student whom you chanced to meet while walking through the Institute corridors, the probability is that he would be an undergraduate, older by two to four years than a pre-war student of the same class. He would explain to you, with courtesy and poise born of military experience, that he is a veteran and that his objective here is to secure a first-class professional education as quickly as possible.

If you were to express an interest in his personal situation, you might discover that he is one of the married veterans more than 30 per cent of the veterans are married), and that his family includes a youngster. If he is one of the hundred families living in Westgate, he will doubtless report that his family is comfortably housed; if he is living outside, he will report grimly and accurately on the desperate housing shortage, although he has managed to find a place to live, with the assistance of the Institute's Housing Bureau.

Whether married or single, he will tell you that he is unable to keep his living expenses within the allotment he receives from the government and that he must therefore depend on savings, family assistance, Institute aid, or a part-time job.

If you inquire about his studies, you will find his attitude mature, serious, and hardheaded, and his grades high. If he had attended the Institute before going into service, his grades are higher now than when he was here before. You will find, further, that he has an articulate interest in the why and how of the educational program and environment at the Institute, and he might respectfully suggest several ways in which he thinks they can be improved.

Altogether you will gain the impression that he is able, personable, and sure of himself; that he has a well thought-out program for his education, is willing to work without stint to get ahead rapidly, and is competent and anxious to undertake larger tasks than a pre-war student of equivalent scholastic age.

In this roughly sketched profile of the 1946 undergraduate, you have observed some of the special characteristics of the students now enrolled at the Institute. Taking the student body as a whole, we find that 3,000 of the 5,000 students are

(Continued on page 3)

### PRESIDENT COMPTON



### Graduate Research Reaches New High

Three Major Trends Assist In Development

The major attention given in this report to undergraduate instruction and student problems does not imply any lack of attention this past year to the Institute's Graduate School. With 1,300 students studying for advanced degrees and with vigorous research under way in all professional departments, the Graduate School is flourishing as never before. Its standards have never been higher or the quality and variety of research greater.

In relation to the Graduate School, let me direct attention briefly to three major trends which are beginning to play a very large role in our advanced program.

The first of these is the development of interdepartmental Centers of Research which co-ordinate the co-operative activities of various departments in certain very important fields of overlapping interest. While we call them "Centers of Research" because research is their predominant role, they are nevertheless destined to play a very important role in our educational program, especially at the senior and graduate student thesis levels. Their influence will also filter back into the co-operating departments to enliven and modernize their programs in the direction of the very latest technological developments.

These Centers of Research appear to be a highly satisfactory answer to a problem which has long confronted us and other institutions, namely, that of handling those interests which reach outside the traditional departmental boundary lines and require the co-operation of the specialists and points of view of various departments. Certain institutions have tried to meet this problem by setting up special institutes; others have set up new departments. Both of these solutions seem to us to be lacking in two desiderata, namely, the mobilizing of the interested personnel in various departments into a co-operative effort, while still recognizing each department's special interest in various aspects of the program, and the full co-ordination of the research with the educational program.

I can best portray a Center of Research by describing the two largest and newest of such centers which have been established during the past year. One of these is the Research Laboratory of Electronics, operated jointly by the Departments of Physics and Electrical Engineering, with the collaboration of other interested departments. The other is the Laboratory for Nuclear Science and Engineering, representing an even wider distribution of interest, since it involves the Departments of Physics, Chemistry, Electrical Engineering, Metallurgy, Mechanical Engineering, Chemical Engineering, Biology, and others to a lesser degree. Each has a director who administers the affairs of the laboratory in such manner as (1) to weld together the co-operating members of the various departments into a working unit, and (2) to provide the special facilities for

(Continued on page 2)

### MIT Converts To Peacetime Reduced Budget

Radiation Laboratory Demobilized; Institute Personnel Cut In Half

Fourteen months ago the Massachusetts Institute of Technology was a scientific arsenal, with a personnel of over 6,000 working on instrumentalities of warfare and 2,000 students largely training for warfare. In the period since V-J Day we have returned to our normal and primary function of education. The 6,000 employed personnel have diminished to 3,000 and the student body has increased to 5,000, the largest number of students ever enrolled at M. I. T. Fourteen months ago we were spending at the rate of \$50,000,000 a year; we have now readjusted to a more manageable but still inflated annual expenditure of \$11,000,000.

These figures are but ineloquent indices of the redeployment problems which have been met and, I am happy to report, largely solved. The Radiation Laboratory has been demobilized, its staff of 3,900 reduced to 15. Its great volume of purchase commitments, for months a matter of concern as it mounted million by million, is now almost completely liquidated, with a consequent reduction in liability and risk not to zero but to a point reassuringly near. Placement of wartime personnel has been largely accomplished. In fact, the demand for technical personnel has far exceeded our supply. The equipment used in the great war laboratories, the value running into many millions of dollars, the bulk running into uncounted tons, has been taken over by the Army and Navy, thus relieving the Institute of a burden which could easily have been a great handicap to reconversion. And, finally, the Institute space occupied by the war projects has been largely recaptured, and the temporary buildings, built primarily for war work, have been retained by the Institute to aid us in handling the postwar overload of students. With these major hurdles taken, we are in a much better position to meet the many other problems inherited from the war and inherent in the present period of readjustment.

For this rapid demobilization, credit is due many people—those who administered the projects and who planned for their liquidation with foresight and with a sense of fine responsibility to M. I. T.; those who, frequently at personal sacrifice, remained after the tumult and the shouting to assist in the liquidation; and the staff of our own Division of Industrial Cooperation, who have managed all contractual and business matters with prudence and vigilance.

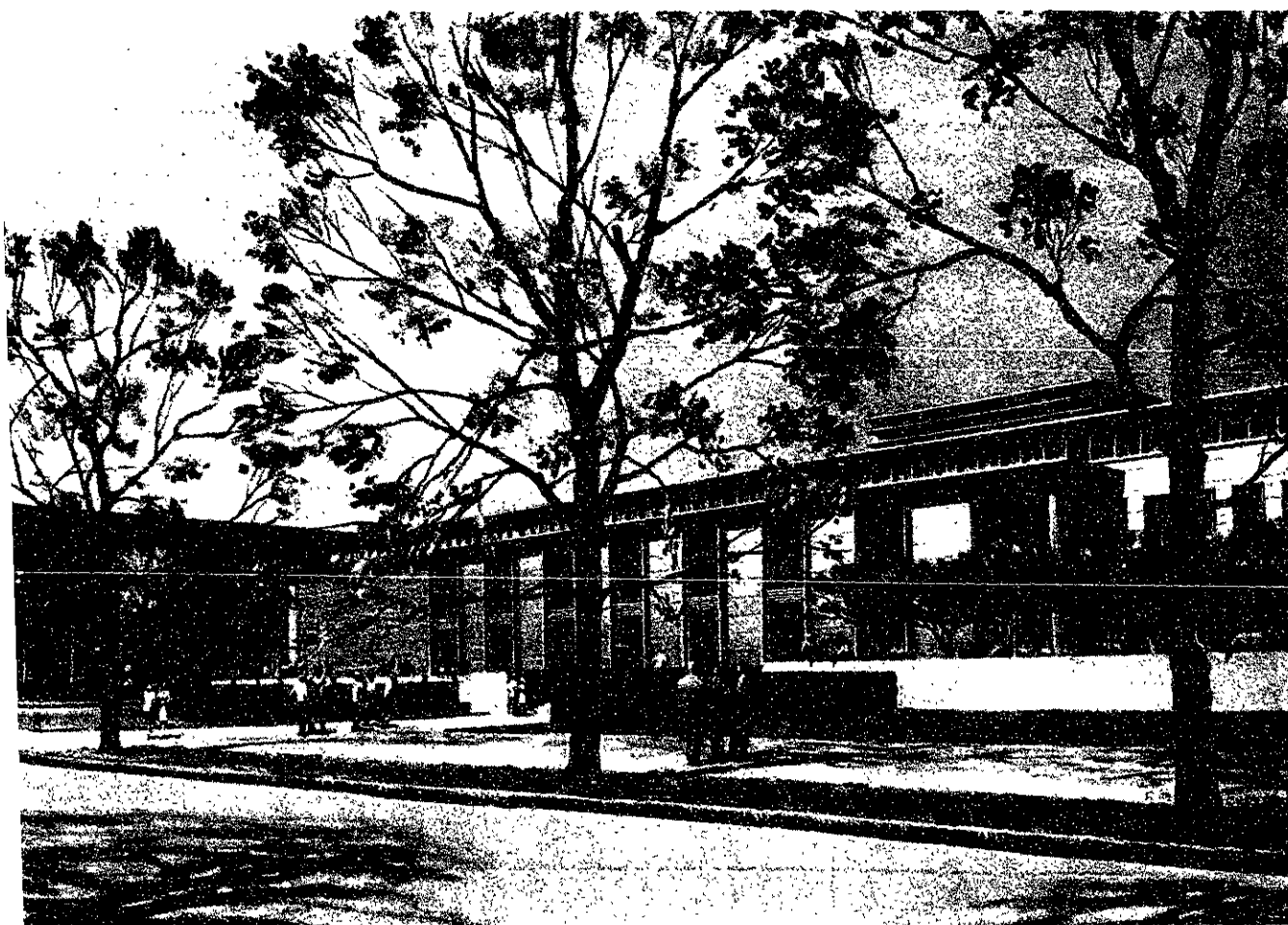
### Total Personnel Stands at 8,000

The transition to a peacetime program has been more difficult because we are far from having returned to the scale of operations typical before the war. To use a budgetary index again, our current annual budget of \$11,000,000 is three times our largest prewar budget. In 1939-1940 we had a total paid personnel, including staff and nonstaff, of 1,400. The current year finds us with 3,000, over twice as many. Total personnel at the Institute, including students, staff, and nonstaff, stands this fall at about 8,000, which is equal to our total personnel at the peak of the war program. Since the end of the war we have added 557 new persons to our instructional staff, of whom 57 have been Faculty appointments. To house the academic activities of this large group, we have found it necessary to occupy all the wartime buildings, with the result that we are using a plant—some of it temporary—greater by half a million square feet than that available before the war.

That these changes have thrown a great burden on both the administrative and teaching staff needs no comment, but one illustration will suffice. Before the war,

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### CHARLES HAYDEN MEMORIAL LIBRARY



This view of the Charles Hayden Memorial Library is an architect's impression of the facade which will appear from Memorial Drive. A three-story building, the Library will be situated on the front adjoining Walker Memorial and Building 6. (See map on page 3.)

# The Tech

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Tuesday, October 8, 1946

No. 20

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## BY WAY OF EXPLANATION

Because the report which President Compton read at the annual meeting of the Institute's Corporation on October 7 discusses many subjects of extraordinary interest and importance to students and their parents, THE TECH, in this special issue presents his report, complete except for appendices, as a service to Technology's 5,000 students.

President Compton's discussion of the complex problems of redeployment following the war; standards of professional education and improvement of education facilities, including the new Charles Hayden Memorial Library and other building projects, and his sympathetic appreciation of the need for well-rounded student life, cannot help but bring to all who read his report a better understanding of the Institute, its professional standards and the interest of the administration in the welfare and advancement of its students. Technology's basic objectives of education, research and co-operation with government and industry, established when the Institute was founded eighty-five years ago, have stood the test of time and still constitute a firm foundation for the future. Coming at a time of unrest and uncertainty in world affairs, Dr. Compton's report strengthens hope for an era of peace and progress for all men.

## Graduate Research

(Continued from page 1)

research which may be desired by staff or students in any of these departments.

Both of these Research Centers are outgrowths of the great interest in and increased tempo of research resulting from the war. Both are mainly supported by very large funds provided by government and industry. Both likewise provide facilities for members of the staff of the Institute who have problems in these fields. Both have, in addition, a staff of administrative officers, research associates, and assistants, and the necessary shop services. Both will offer very great opportunities to advanced students and staff.

The Center of Analysis for the development and use of a wide variety of automatic computing machines is the oldest of our Centers of Research. In a somewhat similar category, and more recent, are the Spectroscopy Laboratory, the Acoustics Laboratory, the Instrumentation Laboratory, the Servomechanisms Laboratory, the Applied Mathematics Program, the Laboratory for Insulation Research, the Industrial Relations Section, and the Research Center for Group Dynamics.

A second major new development in our programs of education and research is the greatly increased degree of interest and co-operation on the part of industry and the War and Navy departments. The work sponsored here by these outside

agencies during the coming year involves a sum greater than the largest pre-war operating budget of the entire institution. From industry have come an increasing number of fellowships and substantial support of new teaching and research programs, several of which I have described earlier in this report.

The third feature of our educational program which I shall mention has to do with the greatly increased number of postgraduate students coming from the Army and Navy for training in certain specialties. For many years we have co-operated with the Navy to provide the postgraduate education of the naval constructors and, more recently, the combined program for naval constructors and naval engineers under the Bureau of Ships through an arrangement with the Postgraduate School at Annapolis. In addition to this, before the war we had a few special military students coming to study such subjects as torpedo design or fire control. Now, however, and again as a result of the recent war experience, both services are sending greatly increased numbers of selected young officers for postgraduate study in educational institutions. The demands on us for such educational assistance to Army and Navy have been heavy and well reasoned, and we have had to limit the number admitted only because of the importance of retaining an appropriate share of opportunity for civilian graduate students to be trained for professional careers in industry or education.

## Westgate Is First Veterans' Project

### Dormitory Capacity Increased By Barracks

In handling the influx of veterans, educational institutions have found the housing problem the most vexing and the most difficult to surmount. The Institute is no exception; we are desperately short of adequate housing for both students and staff. For married students the Institute has built with its own funds the village known as "Westgate," which provides a hundred houses. This project, which I believe was the first veterans' project undertaken by an American college and which was designed and built under the direction of our School of Architecture and Planning, is fully occupied. Its fine accommodations are prized by those fortunate enough to be living there and are eagerly sought by a steadily lengthening waiting list.

But a hundred houses are far from enough and we have availed ourselves of FPHA housing. Immediately west of Westgate, two-story naval barracks brought from Rhode Island are being rebuilt into apartments with accommodations for 180 families. As provided by Congress, the government erects the building on land provided at the Institution's expense with necessary services, roads, landscaping, and so on. This project is costing the Institute \$100,000, which cannot be recovered, while Westgate represents a capital investment of \$500,000, which is largely but not wholly recoverable if the project is occupied ten years.

Our demands are quite beyond the capacity of both these projects, and to care for the overflow our Housing Bureau, established in October a year ago, is daily achieving the impossible in finding accommodations.

Rooms for single students are easier to come by, but there still is a shortage. We have purchased from the government one of the temporary war buildings used by the Radiation Laboratory and have converted it into barracks by an expenditure of \$120,000. This will house 600 single students, at a cost to the students of \$3.15 a week. By careful doubling up, the capacity of our permanent dormitories has been increased. When all of these facilities are in full use, we shall house on campus and in fraternity houses about 2,900 students. To this number should be added, of course, the wives and children who are living in Westgate and will be living in Westgate West. On the basis of Westgate's birth-rate, the number may be expected steadily to increase.

## Total Personnel

(Continued from page 1)

about 1,000 new students were admitted to the Institute per year. Since July, 1945, we have been admitting approximately 1,000 students every four months, and over 2,300 students have been admitted for the fall term just begun. Thus there has been about a fivefold expansion in admission and registration activities, and these have been carried on in circumstances of unusual pressure and complexity.

In terms of the prewar Institute we have therefore undergone a substantial expansion of our peacetime program. Part of this increase has come from new or continuing research financed by the government, our research budget this year being of the order of \$5,000,000. The most significant increase, however, has been in the size of our student body and in the resulting educational responsibility we have assumed. Our research activities are still important to the national defense and welfare, but they are now geared to industrial as well as governmental needs, and are integrated with our educational program. I wish in this report to give principal attention to this educational program and to those aspects of our operation affecting the welfare of our students generally.

## DIRECTOR OF LIBRARIES



Professor John E. Burchard, under whose direction the Institute's library program is being developed.

## SYMBOL OF THE INSTITUTE



The great dome and main colonnade at the entrance to the Massachusetts Institute of Technology

## Dr. D. Farnsworth Heads Infirmary; Eye Clinic Added

In our organization for student welfare, our Medical Department occupies a place of great importance, and I can report that it is admirably equipped and staffed to meet the demands of 5,000 students. The infirmary has been substantially enlarged, the outpatient department has been modernized, and to the psychiatric and dental clinics we have just added a fine eye clinic, established and endowed as a me-

## DOCTOR FARNSWORTH



Dr. Dana L. Farnsworth, the Institute's medical director

morial to the late William R. Kales, '92, by his family. The opening of this new clinic marks the latest in a long series of improvements achieved by Dr. George W. Morse, who retires on January 31, 1947, after a quarter century of effective service to staff and students. He is succeeded by Dr. Dana L. Farnsworth, who becomes the Institute's first full-time Medical Director and whose broad training and experience in internal medicine and psychiatry have admirably equipped him to contribute comprehensively to student welfare through the techniques of the wise physician.

## Tuition Jumps \$100 Annually

### Increase Necessary Due to Rising Costs

In August, I announced the Corporation's decision to increase the Institute's tuition from \$600 per academic year to \$700, the increase to take effect with the opening of the summer term in 1947. This decision to raise tuition, as you well know, was made reluctantly and only after rising costs made it unmistakably necessary. At the time the tuition was announced, we estimated that our unit expenses had risen 28 per cent since 1939-1940. They are still rising, and we must expect this year, before the higher tuition takes effect, to run a large deficit, amounting to several hundred thousand dollars.

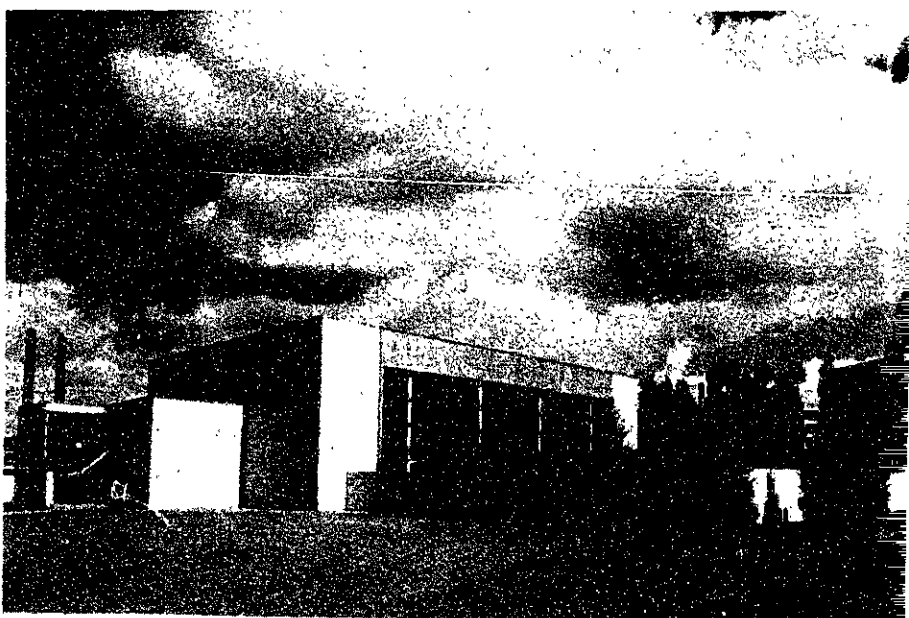
Aside from the difficulties arising from this present period of inflation, the Institute has long-term financial problems which must be squarely faced. Our primary need is for capital funds, both to provide necessary and forward-looking new facilities, and to increase our endowment. This past year endowment income was only 24 per cent of our total income in 1939-1940 it was 37 per cent. A large increase in the Institute's capital resource must be a major objective of the administration and Corporation during the period just ahead.

In my remarks at the annual Alumni Dinner last June, I expressed the feeling that our attention from then on must be effectively focused on the new era before us, and in this report I have sought to review the progress of the past year in terms of the future.

In building for the future we have the firm foundation of the past. The basic objectives of the Institute are as important today as when this institution was founded eighty-five years ago. These objectives of education, research, and co-operation with government and industry have not only stood the test of time, but the development of our civilization has made them ever more important.

Internally the institution is sound and vigorous; externally its reputation is high. We should therefore face the future with confidence and a virile ambition for still further improvement and achievement.

## RECREATION



The Alumni Swimming Pool, one of the finest in the country



THE INSTITUTE'S CORPORATION

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Special Term Members

Term Expires 1947, Willard H. Dow  
Term Expires 1948, Phillips Ketchum  
Term Expires 1949, George A. Sloan  
Term Expires 1950, Harry C. Wiess  
Term Expires 1951, Thomas D. Cabot

President of the Alumni Association

Harold Bugbee

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Terms expire June, 1947: B. Edwin  
Hutchinson, Duncan R. Linsley, Richard  
L. Bowditch.

Terms expire June, 1948: Francis A.  
Barrett, Walter J. Beadle, Donald F.  
Carpenter.

Terms expire June, 1949: Harold B.  
Harvey, Dr. W. Jason Mixter, Ellis W.  
Brewster.

Terms expire June, 1950: Raymond  
Stevens, Edward S. Farrow, Horace W.  
McCurdy.

Terms expire June, 1951: A. Warren  
Norton, Frederick S. Blackall, Jr., Albert  
J. Browning.

Representatives of the Commonwealth:  
His Excellency, Maurice J. Tobin, Governor;  
Hon. Fred T. Field, Chief Justice of  
the Supreme Court; John J. Desmond,  
Commissioner of Education.

\* On leave of absence.

Heads Improvements

(Continued from page 1)

In planning this new library building we have conceived of it as serving a dual but consistent purpose. As the nucleus of our departmental library system and itself a great repository, it will provide the most serviceable collection possible of advanced research and teaching material in the scientific, engineering, and architectural disciplines to which the Institute is primarily devoted. In addition, however, it must serve the humanities program and the nonprofessional development of our students by offering them the maximum invitation to the many important fields of thought and inspiration outside our required curriculum. This concept recognizes that the humanistic responsibility of the Institute's Library is in some ways even more far reaching than that of the libraries of the great liberal arts institutions.

The Charles Hayden Memorial Library, then, will be a great deal more than a conventional library. It will house, for example, our departments in the social sciences and the humanities so that they will be contiguous to their libraries, which are in effect their laboratories. In addition to this formal implementation of the Institute's humanistic program, the new library will seek to facilitate the student's examination of various cultural heritages which cannot find a place in the formal curriculum. The already large collection of recorded music possessed by the Institute will be housed in carefully designed quarters in the new building as part of an audio-visual center which will make available all sorts of recorded sound as well as visual tools such as motion picture film. This center will be as modern as we know how to make it, will provide a variety of sizes of listening and viewing facilities, and, on the formal side, will increase the facilities for instruction in modern languages and public speaking.

The library will also house some of the Institute's special museum collections, will serve as a graphic arts center, will have adequate exhibition space for arts and crafts, and will have a special map room for our growing collection of maps—a group of Technology Alumni under the aegis of the Boston Stein Club, having already provided funds for the development and embellishment of this map area. And, finally, the library will undertake a program of research in improved methods of storing and organizing knowledge and in other aspects of library service.

I could with enthusiasm give many more details of this great new addition to our plant, but I hope that I have suggested enough of its function and the program which is being conceived for it to indicate how important it will be in servicing and enriching our educational program. The concept of the building and of the enlarged library program was the result of intensive studies initiated by the Corporation's Visiting Committee on the Library and carried through under the direction of the Director of Libraries, Professor John E. Burchard, by the Librarian, Professor William N. Seaver,

and his staff, by the Faculty Committee on the Library, by the architects of the building—Voorhees, Walker, Foley and Smith—and by many outside consultants. The Institute, in fact, has participated in an interuniversity study of library construction, carried on under a grant received from the Rockefeller Foundation. We have good reason to believe that in this projected library we are setting a new standard in university library housing and that the entire program reflects the judgment and foresight of the most experienced and forward-looking people in the library field.

We are ready to proceed promptly with the construction of the Charles Hayden Memorial Library just as soon as government permission can be secured. Thus far, this permission has been refused because of the priority given to the needs of veterans. We shall also announce in the near future a very distinguished appointment as Librarian to succeed Professor William N. Seaver, who retires on July 1, 1947, after long and effective service. It is most fortunate that our new library comes at a time when it can be considered as a crowning achievement of the hopes of our retiring Librarian and at the same time can offer a new opportunity for development by his successor.

**Other Building Projects.** While the Charles Hayden Memorial Library is the principal addition to our educational plant which has been planned and financed, there are other projects of great importance. The new Gas Turbine Laboratory, made possible through grants from five industrial companies, is now under construction concurrently with the modernization and enlargement of the Sloan Automotive and Aircraft Engine Laboratory made possible through a generous additional gift from Alfred P. Sloan, Jr. Other new additions which are urgently needed and for which we are now seeking ways and means include a hydromechanics laboratory and towing tank for our Department of Civil and Sanitary Engineering and our Department of Naval Architecture and Marine Engineering; an addition to our Metal Processing Laboratory to house a modernized and enlarged machine tool laboratory for our Department of Mechanical Engineering; a laboratory for the growing program in nuclear science, and engineering; and a new building to house the Departments of Biology and Food Technology.

Veterans

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veterans and 3,700 are undergraduates the remaining 1,300 being registered for postgraduate degrees. The undergraduates are almost evenly distributed among the four classes, with the senior class running slightly smaller.

The new students, both veteran and nonveteran, represent a degree of selection quite beyond that of any group ever before admitted. The 675 new freshmen who have just entered, for example, were chosen out of some 4,500 applications and many times that number of inquiries.

About 2,300, or 80 per cent, of the undergraduates who were on leave of absence for war service are now back, and we expect ultimately to readmit nearly 100 per cent of these former students. Since the educational expenses of the veterans are financed largely by the government, applicants have not been restricted by financial considerations. The students, therefore, come from all walks of life, and for the first time we have a student body for which ability, preparation, personality, and character have been the only requirements for admission.

The postgraduate student enrollment represents an increase of about 550 over our pre-war Graduate School enrollment. The majority of these graduate students are being assisted by employment on research projects or by appointment as teaching assistants. Some of our departments, in fact, have found it necessary to increase their graduate student quotas in order to get the assistants needed to handle the undergraduate enrollment. Many of these graduate students have had extensive experience in war laboratories or in teaching and are therefore highly competent to undertake teaching or research of a high order while they study.

Of the 5,000 students, there are 267 from foreign countries. Because of the overwhelming demand of American veterans, we have had to limit severely our acceptance of foreign students, although the demand from foreign countries has steadily increased. In the later stages of the war we might easily have filled our student body with students from one or two foreign countries whose students were not restricted by the war, had not our Admissions Office planned foresightedly to conserve space for our own returning veterans and to provide space in the foreign quota for students from Allied countries.

Obviously a student body of these general characteristics and of such maturity, capacity, and determination is a challenge to our best efforts. Each department at the Institute fully realizes that the orchestra of specialists making up our Faculty must be tuned with precision and conducted with inspiration to do justice to this audience, and for the past year they have been recruiting, re-equipping, and rehearsing in preparation.

New Dormitory

(Continued from page 1)

have many problems on which the Institute might be helpful; the veterans have problems requiring special attention; and opportunities on the part of the staff for closer liaison with students need to be fully exploited.

The Secretary of the Advisory Council on Athletics, Ralph T. Jope, '28, has likewise called attention to the need for additional personnel to aid in the conduct of our athletic system and to help in meeting the council's objective of an expanded intramural program.

The great increase in student enrollment makes these long-term proposals matters of immediate urgency.

Faculty Enlarged In Drive To Raise Educational Level

The distinguishing hallmark of the Institute has long been the high standard of scholastic achievement it expects of its students and the teaching competence and imagination this standard of achievement requires. Are this standard and this competence as of 1946 in line with our great tradition? Are we still pioneering and advancing in educational method and in the art of teaching engineering, science, and architecture?

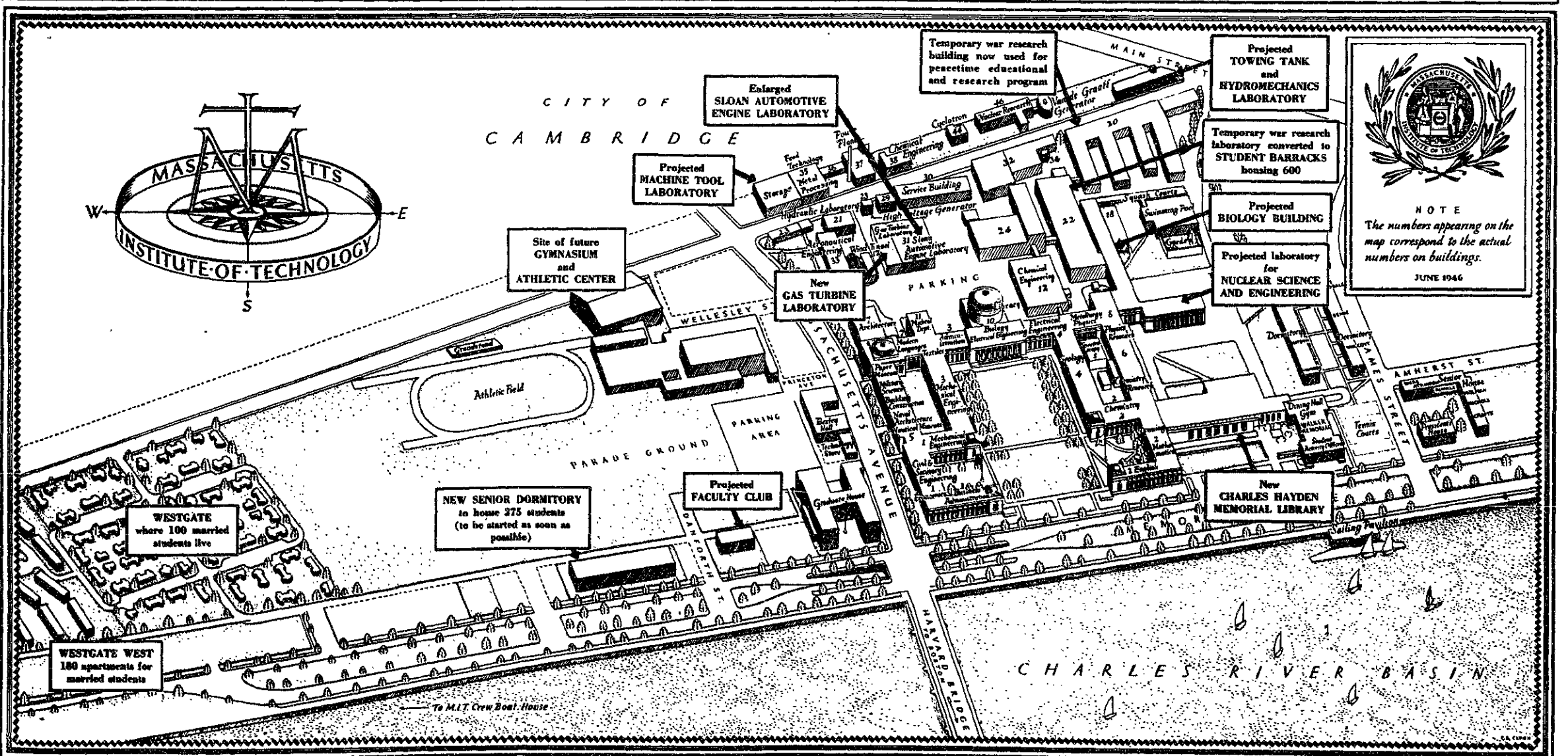
Time will provide the only definitive answer to these questions, but I can report that our Faculty in this period of readjustment and overload is aggressively occupied with the problems of educational policy and of teaching effectiveness. It is acutely aware that standards were forced down during the war by a decimated teaching staff and by the year-round teaching program and that a special effort must now be made to recover lost ground. It is also acutely aware of the magnitude of the problem involved in providing professional instruction of Institute grade to 5,000 students.

The recovery in standards is fortunately being expedited by the maturity and capacity of our student body. From all sides come reports from instructors that they have never had such responsive classes or seen so many students of superior ability and serious purpose. During the summer term, at a time when studying is most difficult, the students achieved a notable academic record.

Another factor that has expedited the recovery of scholastic standards has been the rapid reassembly of our staff; we have had fortunately few losses in senior personnel. Moreover, we have been exceedingly fortunate in securing outstanding additions to our staff, both to fill vacancies and to provide for the larger student body. Taken either as a whole or department by department, and including the new and the old, I can say with pride and good conscience that this 1946 staff is unexcelled anywhere in the world in professional competence, reputation, loyalty, co-operation, and industry. Given the proper facilities it can without question meet the challenge of the 5,000 students now assembled here.

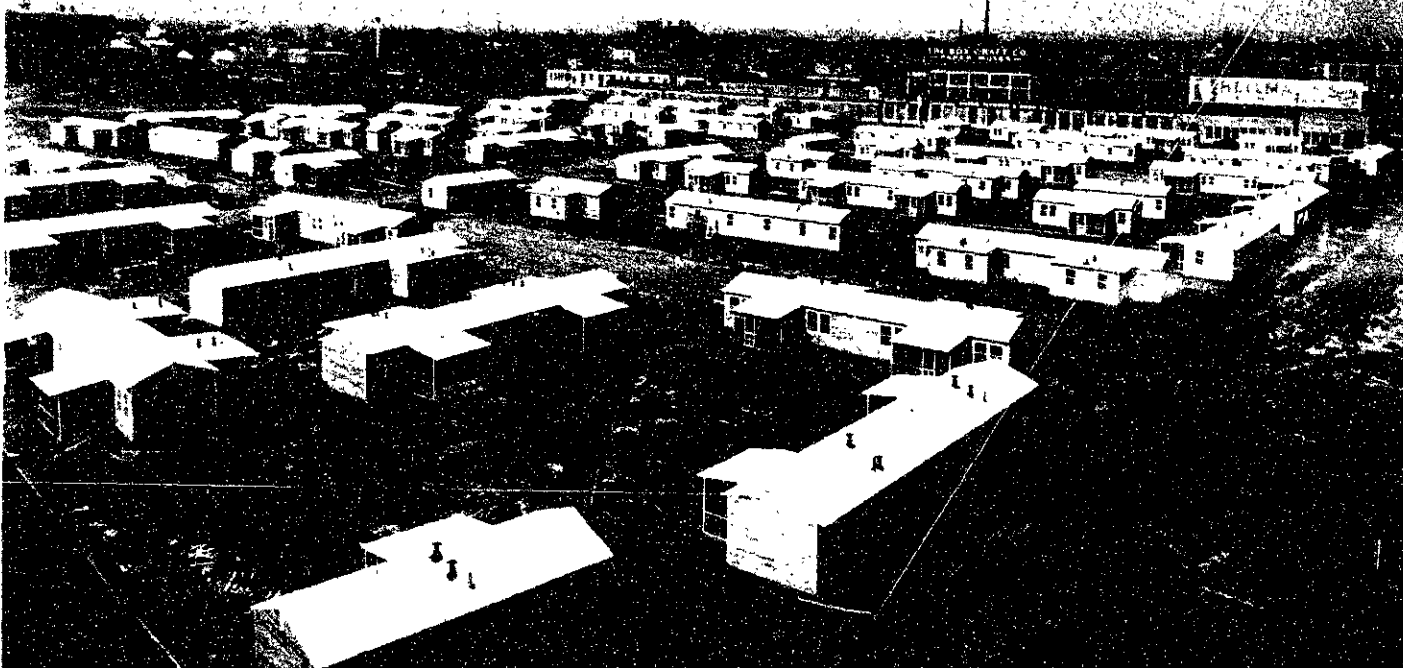
Another important factor has been the foresight of our Faculty in planning for the present peak load. Three years ago, in the midst of war and in anticipation of post-war overcrowding, the Faculty both strengthened and simplified our curriculum after an extended study of our undergraduate program—one of the earliest of the now numerous studies of educational objectives and procedures undertaken by American colleges. As a result of this study, some duplications and minor offerings were eliminated, and subject sizes were standardized, so that we were able, without significant educational loss, to reduce by 20 per cent the number of subjects offered, with a consequent increase both in instructional efficiency and in schedule flexibility. We should be unable to handle

THE INSTITUTE CAMPUS OF THE FUTURE



This map of the Institute Campus shows where the proposed additions will be situated. The new Dormitories, the Gymnasium, the Charles Hayden Memorial Library, and the Nuclear Research Buildings are seen in this bird's-eye view of the grounds.

WESTGATE HOUSING UNIT



A general view of Westgate, the housing development built by the Institute to provide homes for married veterans returning to complete their education. The 100 houses in Westgate cover nearly ten acres of land adjacent to the Institute's educational buildings and have every convenience for simple and effective living. Fifty of the houses have an extra bedroom and a separate kitchen for families with children. A feature of the equipment is a compact one-piece kitchen unit four feet wide and two feet deep, which includes not only a four-burner gas stove with oven, but a refrigerator, sink, as well as drawers and shelves for storage. These kitchen units in most of the houses are installed in a corner of the living room and have a separate ventilating system to carry away cooking odors. When not in use it is enclosed by doors. The houses are heated by gas space heaters and have a hot-water storage system. They are insulated for comfortable living both in winter and in summer. All houses have screened porch.

5,000 students at the present time had not the Faculty prepared for them by this simplification of our curriculum. At the same time our program in the humanities was increased and strengthened, as I described in detail in my report of two years ago.

Now that we have had a chance to observe some of the results of this experimental curriculum revision, it seems timely to prepare to review them in accordance with the stipulation made by the Faculty when these revisions were adopted for the immediate postwar period. The chairman of the Faculty has presented to the Faculty Council a proposal for a fundamental review of our present emergency program and, more importantly, a long-range study of our entire educational policies and procedures. This would be in line with past practice of periodically re-evaluating our educational objectives and methods. This proposal is to be submitted to the Faculty at its regular October meeting.

If the proposal is adopted, as I trust that it will be, it will be the responsibility of this committee, with Faculty directive and advice, to formulate the scope and objectives of its study, but I think we can anticipate some of the matters which it will review: Do our admission requirements need revision, and can they be better co-ordinated with programs in the secondary schools? Are we too specialized in our undergraduate program in the upper two years, and is our Course system the most effective organization? Is it now possible to give a reputable and effective engineering education in four years? What should be the relative emphasis on undergraduate and post-graduate education, and how should they be related to each other? Have we swung too far in the direction of theory as distinct from practice, or have we not gone far enough? Have we yet allotted enough time for humanistic studies? Do we require too much routine and scheduled work, leaving our students too little time for self-development? No answers are presupposed to these questions, but the questions do indicate the comprehensiveness of the committee's assignment. Whether the committee recommends few changes in our current program or makes proposal for drastic revision, it will have great importance in verifying and stimulating our undergraduate teaching.

The Faculty is likewise giving attention to the problems of student counseling, and there is much of value to be done here. Our system of registration officers, whereby each class in each Course has assigned to it every year a staff member who is available for consultation on programs, occupies a fundamental place in our student counseling system. For many unavoidable reasons this system deteriorated during the war. With the present heavy student enrollment to handle, plus the extended counseling needed by veterans, registration officers need more time and assistance. We are trying to provide both. Each department in its own way is developing a better means of personal contact with students, and assigning special student liaison duties to carefully selected staff members. This whole program is closely tied in with

the counseling service of the Office of the Dean of Students.

The recommendation which I made two years ago that we provide a more centralized supervision of our instructional organization in the first two years is being carried through by the Dean of Science, Dr. George R. Harrison, under whose jurisdiction come a majority of the departments concerned with instruction of freshmen and sophomores. Under his chairmanship a committee representative of these departments is facilitating co-ordination of subjects in the first two years and providing the mechanism for constant appraisal of teaching methods and quality of instruction.

As the Faculty adjusts and tunes the delicate and complex organization of our undergraduate school, it is also looking out in new directions. The new Department of Food Technology launched its program during the year with financial assistance from six industrial companies, and the Department of Economics and Social Science organized a new undergraduate program in Economics and Engineering. The Department of Metallurgy, jointly with Chemical Engineering, undertook a new program in corrosion, and the Department of Mechanical Engineering transferred to Metallurgy its personnel and facilities in metal processing, where they are to provide the nucleus for a new program in mechanical metallurgy. As a result of opportunities developed during the war, we are organizing a new educational program in the field of gas turbines and jet propulsion, and are giving much greater emphasis to electronics and to nuclear science and engineering, all of which are certainly destined to occupy an important place in the technology of the future. Notable was the establishment of our first adequately endowed chair, the Sloan Professorship of Industrial Management. Under the generous endowment provided by Alfred P. Sloan, Jr., '95, this professorship will be supplemented by lectureships held by distinguished visiting lecturers from industry.

In the administration of our educational program, we had one major change during the year. Dr. Edward L. Moreland, Dean of Engineering since 1938, asked to be relieved of this post as of July 1, 1946. Fortunately he agreed to continue to give part time to the Institute, and accepted appointment as Executive Vice President to act as consultant to the President and Vice President and to assume major responsibility in certain specified areas. To succeed him as Dean, we are happy in the appointment of Professor Thomas K. Sherwood of the Department of Chemical Engineering, who brings to the administration of the School of Engineering wide experience as an engineer and educator and intimate knowledge of the Institute.

Behind all these many moves designed to maintain and extend our educational effectiveness is a reaffirmation of our faith in the Institute's system of undergraduate education and of our conviction that in science, engineering, architecture, and related fields a flourishing undergraduate school, joined with a powerful graduate school, best insures high educational standards and creative scholarship.

Enrollment Statistics

In June, 1945, our civilian enrollment stood at 1,100; this fall sees it exceed 5,000. The official count for 1945-1946, taken on July 30, 1945, was 1,538. This compares with 1,198 in 1944-1945; 1,579 in 1943-1944; and 3,048 in 1942-1943. Of the total for 1945-1946, 69 were women, of whom 23 were in Chemistry. A total of 121 American colleges and universities and 59 foreign institutions were represented by graduates studying at Technology. Thirty-four foreign countries were represented.

Student Aid

The demands on the scholarship and loan funds continued below normal. For 1945-1946, the totals were as follows: undergraduate scholarships, \$56,481, only \$1,000 greater than the year before; graduate scholarships and fellowships, \$82,412; loans to all students, \$16,317, a figure far below the \$163,000 loaned in 1939-1940. The Student Employment Bureau of the Technology Christian Association placed 275 students in part-time jobs, and they earned a total of \$47,277, compared with \$59,600 in 1940-1941.

The Massachusetts Institute of Technology

CAMBRIDGE, MASSACHUSETTS

THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY offers the following Professional Courses:

SCHOOL OF ARCHITECTURE

Architecture City Planning City Planning Practice

SCHOOL OF SCIENCE

Chemistry Mathematics  
Food Technology Options: Pure and Allied  
Food Technology— Mathematics  
Five Year Course Industrial Statistics  
General Science Physical Biology  
Geology Physics  
Quantitative Biology

SCHOOL OF ENGINEERING

Aeronautical Engineering Electrical Engineering—  
Building Engineering and Con- Cooperative Course  
struction  
Options: Heavy Construction General Engineering  
Light Construction Marine Transportation  
Business and Engineering Ad- Mechanical Engineering  
ministration Options: General Mechanical  
Courses: Based on Physical Engineering  
Sciences Engineering Science  
Based on Chemical Automotive Engi-  
Sciences neering  
Chemical Engineering Mechanical Engineering—  
Chemical Engineering Practice Cooperative Course  
Civil Engineering Metallurgy  
Electrical Engineering Options: Metallurgy  
Options: Electric Power Mineral Dressing  
Illumination Engi- Meteorology  
neering Naval Architecture and Marine  
Electrical Commu- Engineering  
nications  
Electronic Applica- tions

The duration of each of the above undergraduate Courses is four academic years, with the exception of Architecture, Food Technology (Five Year Course), Physical Biology, and the cooperative Courses in Electrical Engineering and in Mechanical Engineering, which extend over a period of five years and City Planning Practice which covers a period of six years. In addition to the Bachelor's degree, the above five and six year Courses, with the exception of Architecture, lead also to the Master's degree.

Graduate study, leading to the Master's and Doctor's degrees, is offered in Ceramics and in most of the above professional Courses.

A five year Course is offered which combines study in Engineering or Science, and Economics. This leads to the degree of Bachelor of Science in the professional field, and to the degree of Master of Science in Economics and Engineering or Economics and Natural Science.

For information about admission, communicate with the Director of Admissions.

The Catalogue for the academic year will be sent free on request.

NEW EYE INFIRMARY



President Compton, Mrs. William R. Kales and Robert G. Kales, '28, at the dedication of the William R. Kales Eye Clinic, latest addition to the Institute's medical service for students. In the background is a portrait of Mr. Kales.